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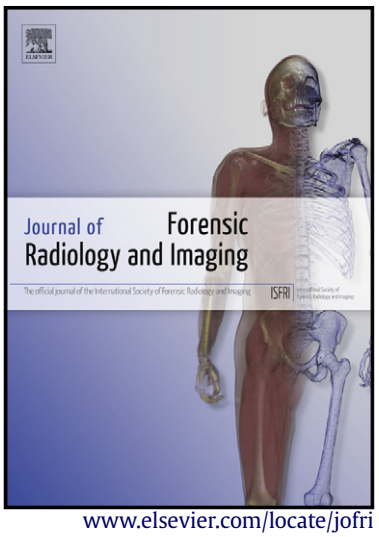

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Battered Child: Cranial Imaging Findings in a Distinct Case of Non-Accidental Injury

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Nothing to disclose.

Article type: Visual note

Visual note

A six months old boy was referred to the pediatric emergency unit with bilious vomiting. An increased head diameter was evident on physical examination. The patient had no fever; blood parameters were within normal range. The patient had no clinical signs of acute cranial injury; no retinal bleeding or petechiae indicating child abuse were detected. The extremities were unremarkable on clinical examination; there were no signs of hematomas ~~or fractures~~. A skeletal survey to rule out fractures was not conducted. Reflex testing was normal.

The infant was referred to the radiology department to rule out pyloric stenosis. The abdominal sonography was normal. A cranial ultrasound study was performed to check for central pathology explaining the vomiting. Trans-cranial ultrasound was performed to check for major brain injury. The ultrasound examination revealed large bi-hemispheric fluid collections in the subdural space. The fluid collections exhibited multiple septations. Both the supra- and infra-tentorial brain parenchyma was markedly atrophic. MRI was performed on the same day 4 hours after sonography. MRI confirmed the sonographic assumption of brain damage. It showed bitemporal multicystic encephalomalacia (arrows in A and B) and bilateral subdural hygromas (asterisk in A and B). Slight superficial siderosis matching prior subarachnoidal hemorrhage was seen (arrows in C). Additionally bilateral intra-parenchymal hemorrhages were found. There were also areas of ischemic changes seen on diffusion-weighted images.

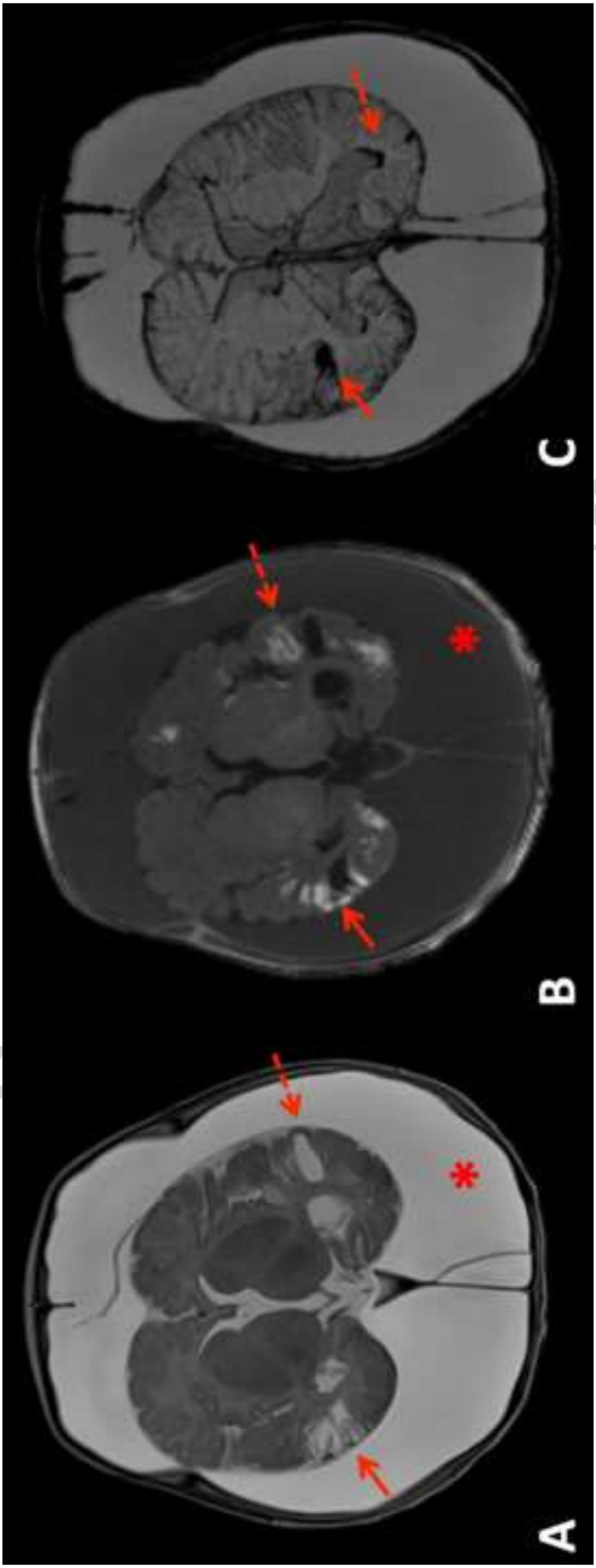
The interrogation of the family members brought to light that the infant suffered from a long-standing history of physical abuse not only by the parents but also by a second-degree relative. ~~The extensive brain tissue damage was caused by repeated shaking of the child brain contusions with intra- and extra-axial hemorrhage fitting the diagnosis "Abusive Head Trauma (AHT)".~~

Highlights:

1 In atypical, clinical cases, child abuse should be included in the differentials.

2 Abusive head trauma can lead to extensive damage of brain parenchyma.

3 Brain imaging can show various manifestations: i.e. bleedings, ischemia, brain atrophy and hygromas as in the present case.



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